DOCUMENT RESUME

ED 253 704 CE 040 684

AUTHOR Richardson, William B.; Nieminen, Jerrold A.
TITLE A System for Conducting Vocational Follow-up Studies.
INSTITUTION Indiana Univ., Bloomington. Vocational Education Services.
SPONS AGENCY Indiana State Board of Vocational and Technical Education, Indianapolis.
PUB DATE 85
NOTE 32p.
AVAILABLE FROM Vocational Education Services, 840 State Road 46 Bypass, Room 110, Indiana University, Bloomington, IN 47405.
PUB TYPE Guides - Non-Classroom Use (055)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Educational Planning; Employer Attitudes; *Followup Studies; Graduate Surveys; *Guidelines; *Models; Outcomes of Education; *Program Development; Program Implementation; Secondary Education; Statewide Planning; *Vocational Followup
IDENTIFIERS Indiana

ABSTRACT

The importance of conducting vocational follow-up studies increases as interest in employment-related education and training programs spreads. Expanding student enrollment and increased Federal and state support have prompted educators to develop models that determine the effectiveness of training programs. This monograph briefly introduces and outlines the basic elements contained in successful follow-up systems. It is organized in four sections. The first section provides general information about follow-up studies, while the second addresses the procedures and processes necessary to conduct former student follow-up studies. The third section examines the growing emphasis on and processes for conducting employer follow-up studies, and the last section covers the use of follow-up data. (KC)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED253704

A System for Conducting Vocational Follow-Up Studies

William B. Richardson
Jerrold A. Nieminen

Vocational Education Services
School of Education, Indiana University

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
This document has been reproduced as received from the person or organization originating it.
Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Vocational Education Services (a Fancher)
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

CE040684

A System for Conducting Vocational Follow-Up Studies

by
William B. Richardson
Jerrold A. Nieminen

VES
Bloomington, Indiana

Published by:

Vocational Education Services
Bloomington, Indiana

Editor: Judith Roman

Editorial Assistance: Annette Fancher

To order additional copies of this booklet or receive information on additional titles in this series contact:

Vocational Education Services
840 State Road 46 Bypass, Room 110
Bloomington, Indiana 47405
(812)335-6711

Copyright 1985

Vocational Education Services is supported with funds from the Indiana State Board of Vocational and Technical Education. It is funded through the Indiana University School of Education. *Project number* 323-84-3-1

Table of Contents

1 Introduction to Vocational Follow-Up .....

2 Vocational Student Follow-Up Studies .....

3 Employer Follow-Up Studies .....

4 Using Follow-Up Data .....

Preface

The importance of conducting vocational follow-up studies increases as interest in employment-related education and training programs spreads. Expanding student enrollment and increased Federal and State support have prompted educators to develop models which determine the effectiveness of training programs.

This monograph briefly introduces and outlines the basic elements contained in successful follow-up systems. The first section provides general information about follow-up studies, while the second addresses the procedures and processes necessary to conduct former student follow-up studies. The third section examines the growing emphasis and processes for conducting employer follow-up studies, and the last section covers the uses of follow-up data.

This guide is a result of two research projects supported by the Indiana State Board of Vocational and Technical Education. The authors express their appreciation to the State Board for this support.

The initial research was conducted to develop a follow-up system for the state of Indiana. Sincere appreciation is expressed to Dr. Joan McFadden, Dr. Bill Peterson, and Dr. Norm Sievert, who served on the initial research team. Also, the writers express appreciation to Ms. Debbie Belter, Mr. Jeff Moss, and Mr. Tom Arner for their work as research assistants.

Finally, the writers express their appreciation to the personnel of the many vocational programs throughout the state where the methodologies outlined in this publication have been used. Their feedback and criticism have been invaluable in the final stages of refining the thinking that has resulted in this guide.

William B. Richardson
Jerrold A. Nieminen

1

Introduction to Vocational Follow-Up

The primary purpose of vocational education is to prepare individuals for employment. Vocational education accomplishes this purpose by linking classroom instruction with jobs in the labor market. Vocational follow-up studies measure the success of vocational education in two ways: first, by keeping track of former students' job placement and determining their employment success, and second, by determining employers' perceptions of the effectiveness of their employees' vocational education.

Because vocational education is directly linked to the labor market, it is held accountable for the employment success of former students. One of the most important reasons to conduct vocational follow-up studies is to determine vocational programs' effectiveness in fulfilling their purpose of preparing individuals for employment. Data which show that former vocational students are successfully employed in their areas of preparation provide a foundation for accountability. When a school board member, taxpayer, legislator, school principal, or other person asks if the added costs of improvements in vocational programs are necessary or worthwhile, the vocational educator can document his/her reply with follow-up study data. Personal, undocumented opinions offer little comfort to policy makers who already have many pressures for funds.

Another important reason for conducting vocational follow-up studies is that vocational instructors, local school personnel, and students in vocational programs benefit from study results. Instructors can use follow-up data to update and modify curricula. They can also benefit by renewed enthusiasm for their programs when study results identify the positive influences the programs have had on former students. Local school personnel find follow-up data helpful when making program mod-

ifications, including deciding when to initiate, expand, change, and/or delete programs. Former students' feedback on the way they use skills obtained through vocational training enables school personnel to make classroom experience more relevant to the world of work and, consequently, more valuable to current and future students.

Finally, conducting vocational follow-up studies is one means of meeting the mandate for evaluation information set forth in the 1984 Carl D. Perkins Vocational Education Act. Some states also mandate that local schools establish follow-up systems.

Local education agencies need follow-up information for local program planning as well as for state and federal reporting purposes, and the responsibility for conducting follow-up studies is often theirs.

Within the school, the responsibility for follow-up is often delegated to the vocational director or to a designated representative such as a counselor, the principal, or in many cases, a vocational instructor. The individual responsible organizes the study with the help of the vocational staff. Often, a staff steering committee is established to assist in the development and implementation of the follow-up system.

This publication is a guide for conducting vocational follow-up studies. Chapters Two and Three discuss the specifics of conducting student and employer follow-up studies. Chapter Four shows how to prepare follow-up reports and discusses the use of follow-up information. (For further information on designing vocational follow-up surveys, see Pershing and Schwandt 1984).

Conducting Vocational Follow-Up Studies

The first step in conducting a follow-up study is to determine the goals of the follow-up. The study can be limited so that only basic questions are answered, or it can be broad and attempt to obtain information about many diverse topics. There are three common follow-up study goals: first, insuring program accountability; second, aiding in program planning; and third, improving programs. (For more information about program planning, see Copa 1981.)

Develop a list of questions to help determine what areas should be covered in the study; refer to these questions when determining the study data needs and when developing methodologies and instruments. These will help focus the study and assure that its results will meet identified study goals. Typical follow-up study goal questions include:

1. How well are program goals and objectives being met?
2. Are the benefits of vocational education cost-effective?
3. Is training appropriate for current employment?
4. How effective was the program for students going on to further education?
5. For what reasons did students leave the program prior to completion?
6. To what extent has the program assisted program leavers?
7. As employees, what qualifications do former students tend to possess or lack?
8. What are program strengths and weaknesses?
9. What program modifications are necessary to meet changing job requirements?
10. What characteristics of former students contribute to their employability?
11. How has vocational education contributed to preparation for job advancement?
12. How well have related services such as guidance and placement contributed to the individual?

Once the goals of the follow-up study have been identified, preparation for conducting the study can begin. Figure 1 identifies sequential steps for conducting vocational student and employer follow-up studies. The rest of this chapter will discuss the specifics of preparing for and conducting follow-up studies among students, and Chapter Three will discuss follow-up studies among employers.

FIGURE 1

SEQUENTIAL STEPS FOR CONDUCTING VOCATIONAL STUDENT AND EMPLOYER FOLLOW-UP STUDIES

1 Determine follow-up study goals
2 Determine which programs will be followed and what percentage of program leavers and completers will be followed
3 Determine the interval of follow-up—usually a one-year and either a three and/or five-year follow-up
4 Develop methodologies for student follow-up and prepare instruments
5 Obtain names, addresses, and other identifying information of students to be followed
6 Conduct student follow-up, contact nonrespondents as necessary to obtain adequate response rates
7 Analyze student follow-up data
8 Determine which employers will be contacted
9 Develop methodologies for employer follow-up and prepare instruments
10 Conduct employer follow-up, contacting nonrespondents as necessary to obtain adequate response rates
11 Analyze employer follow-up data
12 Prepare follow-up reports and report data to local, state, and national levels

2

Vocational Student Follow-Up Studies

Vocational student follow-up is the process of tracking former vocational students and studying their employment histories to determine how well they use their vocational training to secure and retain employment. The following statement will serve as a working definition of vocational student follow-up:

> a systematic examination of the performance of former students in relation to the goals and objectives of the educational programs through which the students were prepared (Laws of Florida, Chapter 73-235).

Analysis of this definition reveals three concepts important to vocational student follow-up. First, follow-up is a systematic examination. This implies that the tracking of former students and the study of their employment histories is an organized, preplanned process. Second, the performance of former students is the subject of the examination, with the term "performance" emphasizing the fact that vocational students are trained to perform skills. Third, students' performance is measured in relation to the goals and objectives of the individual program.

Establishing a systematic approach to the follow-up of former vocational students requires attention to many components. Successful studies will give attention to the following tasks:

1. collecting and storing student data
2. identifying follow-up populations
3. determining data needs

4. developing a follow-up methodology
5. developing a follow-up instrument
6. obtaining adequate response rates
7. analyzing and summarizing follow-up data

Figure 2 presents one example of a follow-up system which addresses these seven components.

Collecting and Storing Student Data

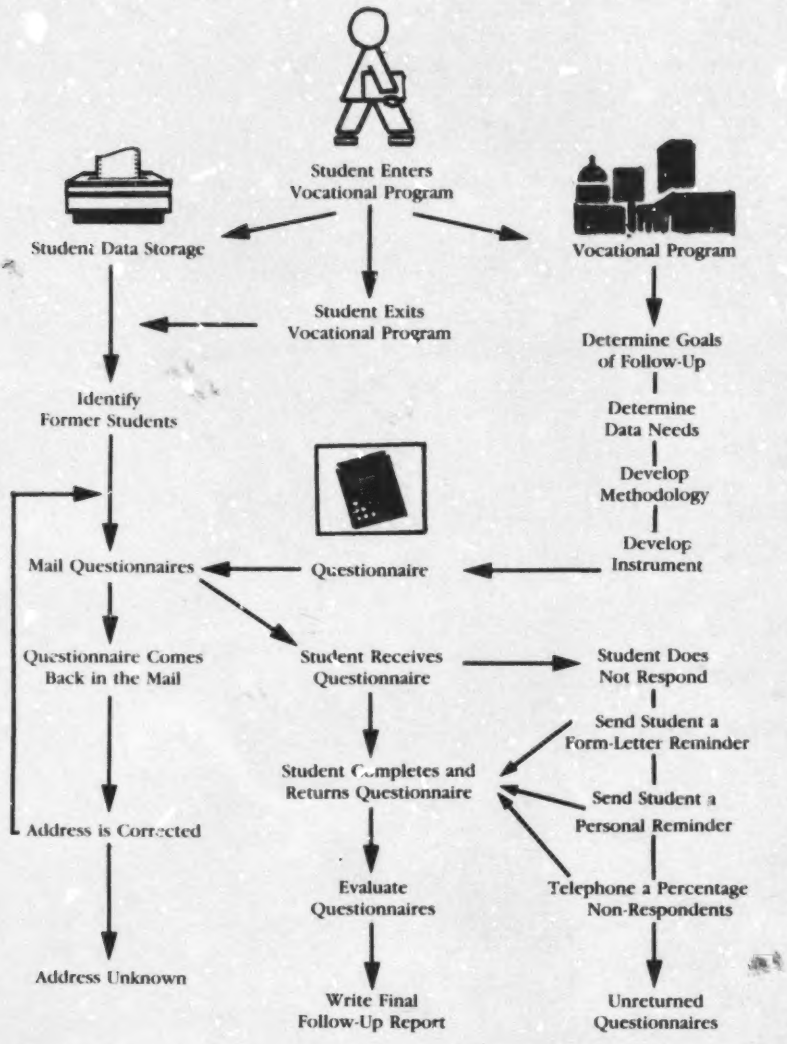
The initial step in establishing a vocational student follow-up study is to develop a systematic means for collecting and storing student data. Student data that must be obtained include:

1. present address and phone number
2. permanent address and phone number
3. parents' or guardians' names and addresses
4. vocational program enrollment data
5. descriptive data such as age, sex, race, etc.

No single format, form, or process will meet all information collection needs. One approach is to use three forms to obtain and verify student data: the student's initial enrollment form, a change of status form (used to update information relevant to the student's status in school), and an exit form (used when the student completes or leaves the program). The last form also provides a format for the exit interview. Obtaining exit information provides an opportunity to verify the information that will be needed to contact the student later. These three forms constitute the basis for a student data collection and storage system. Many schools computerize this information for easy retrieval.

FIGURE 2

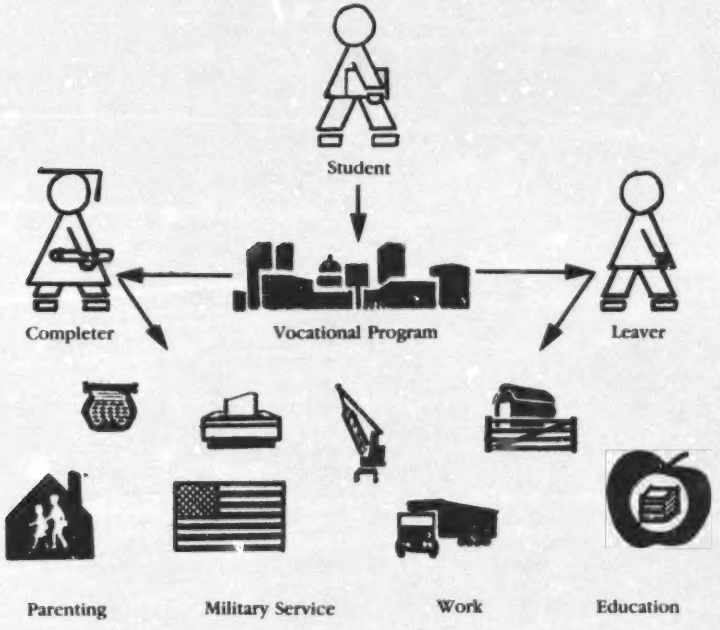
A System for Follow-Up of Former Students



Identifying Follow-up Students

Former students are the focal point of a systematic follow-up and they can be divided into two categories, program completers and program leavers. Program completers are those individuals who have completed all the requirements of a particular vocational program. Program leavers are those individuals who were enrolled in a vocational program but did not complete all the requirements of the program. Both program completers and leavers may either enter the work force or choose a non-work alternative such as further education or the armed forces (see Figure 3). Avoid the common mistake of conducting a follow-up of program completers or graduates only. To obtain reliable data, it is desirable to survey both program completers and program leavers.

FIGURE 3
A STUDENT'S PATH THROUGH VOCATIONAL EDUCATION



Determining Data Needs

Determining what data should be collected is one of the most crucial phases of developing a follow-up instrument. The final decision as to what types of information are needed depends upon the goals of the follow-up study.

Identifying Information—Includes name, address, race, sex, age, and other descriptive data; questions pertaining to physical handicaps can also be asked here. Although much of this information is available in school records, including it in the instrument provides a cross check and a means of updating records.

Mobility—Asks the distance in miles from the school to the place of employment; identifies patterns of former students helpful to program planners.

Employment Status and History—Provides insight into the employability of students. Is the former student employed? Is the employment full-time? Is the employment in the area of training? Has the student been unemployed?

School Information—Seeks data such as which vocational program the student was enrolled in, grade average, year completed (or left), and extracurricular activities. The information is not necessary if student data records are complete.

Techniques Used to Find Employment—Determines sources of job information, effectiveness of school placement services, and methods used by former students to find the first job after the program.

Information About Jobs—Seeks data about the relationship between the jobs held (both full-time and part-time) and the degree to which the former students are: a) satisfied with their jobs, b) working in jobs related to their vocational training, c) earning competitive wages, and d) trained for their jobs. Can include questions about all jobs held since leaving the program, the present job only, or the first job taken after completing the vocational program *and* the present or most recent job. The depth of these questions will depend on the goals of the follow-up study.

Quantity and Quality of School's Guidance Services—Information about help received from the guidance department in such areas as career information, interest testing, program choice alternatives, personal counseling, etc.

Student Perception of the Vocational Program—Determines students' general satisfaction with the training received. May also ask whether or not the student would recommend the program to others.

Developing a Follow-Up Methodology

Several methods can be used to conduct the follow-up study, including personal interviews, telephone interviews, mailed questionnaires, or some combination of all three. However, the single most common technique used is mailed questionnaires. Personal interviews require large time commitments, and their validity is contingent upon having well-trained interviewers. Since most former students work during school hours, telephone contacts must be made primarily during the evening hours. Mailed surveys provide reliable data, are convenient, save time and money, and require fewer personnel.

Provision must be made for accurate record-keeping from the very beginning. All mailed questionnaires must be recorded and responses registered; it is impossible to contact nonrespondents if there are no records of who has responded. Figure 4 presents a sample form for monitoring the status of questionnaire returns.

BEST COPY AVAILABLE

FIGURE 4
RECORD-KEEPING SYSTEM FOR
MONITORING FOLLOW-UP PROCESS

		Student Follow-Up Records			
# Student's Name	Instrument Number	Date Sent	First Reminder	Date Received	Additional Comments
1. Sue Jones	0001	10/17/84		10/26/84	
2. John Smith	0002	10/17/84	10/26/84	10/31/84	
3. Sally Juan	0003	10/17/84			Returned in mail; address unknown.
4. Al Merit	0004	10/17/84	10/26/84	11/02/84	Received incomplete; called to finish.
5. Bonita Hill	0005	10/17/84	10/26/84	10/30/84	Refer to instrument for comments.

The director of the follow-up program should give careful attention to the format and mailing of the follow-up instrument. The traditional and still effective approach is to send each student a package which contains a cover letter explaining the follow-up, directions for completing the questionnaire, the questionnaire itself, and a stamped, self-addressed return envelope. A popular, less costly alternative to this traditional approach is to use a self-mailer, a self-contained unit that can be mailed to the student, easily opened, completed, and then folded and placed in the return mail. Proper timing in mailing the follow-up materials is important. Avoid mailing around holidays and use first-class mail if possible. Some researchers believe that the best response rates are obtained if the instrument is received at the first of the week.

Regardless of the format used, the cover letter is important. It must be professionally prepared and brief, yet descriptive and neat. Personalize the letter as much as possible. The letter displayed in Figure 5 is addressed to the student by name and signed by a school official. Many schools have the teachers of each program sign letters sent to their former students and write a brief, personal note to each. Experience proves that students are more likely to respond to requests that have personal touches.

BEST COPY AVAILABLE

FIGURE 5
SAMPLE COVER LETTER

Monroe County Community School Corporation

Administration Center
315 North Drive
Bloomington, IN 47401
October 17, 1984

Ms. Susan Jones
1441 Oak Street
Columbia, IN 47420

Dear Susan:

Your high school is trying to find out how well its vocational training prepares students for employment. We would like you to answer some questions about your experiences during and since high school. This information will help to improve the quality of secondary school education in our state. It will also tell us whether additional steps are needed to help former students find satisfying jobs.

You are the most important source of information about your high school's vocational training programs. Please complete the enclosed form and return it to us by November 2, 1984. We have provided an addressed, postage-paid envelope for mailing back the questionnaire.

All the information you provide will be kept strictly confidential. Your answers will be combined with the answers of other former students and presented in summary form. Your cooperation is important and will be greatly appreciated. Please read the instructions carefully before answering any of the questions.

Thank you for your help.

Sincerely,

Marcus Smith
Principal

Your public schools... There's no better place to learn.

Letterhead reprinted by permission of the Monroe County School Corporation.

Developing a Follow-Up Instrument

Whether the study is conducted by mail or exclusively by either personal or telephone interviews, the development of the follow-up questions is critical to the entire process. Although a standard set of questions must be used to assure compatible data, there are many possible starting points; one study lists 250 possible questions (Farley 1979). Developing a good instrument requires adherence to some basic principles:

1. The questions must be clearly written, straightforward, and easily understood. Have current students read the items and provide feedback about the questions. The final draft of the instrument should be field-tested to isolate potential problems prior to large scale use of the instrument.

2. The response pattern for the questions must be kept simple. Questions requiring lengthy written responses should be avoided. Student response rates decline as the number of written response questions increase. Best results are obtained from questions which require the student to make a brief response, perhaps only a check.

3. The number of questions should be kept to a minimum. One page is generally sufficient.

4. The questions should allow for easy summarization. Normally, if the first three principles are followed, summarizing the results will be easy.

5. Allow the student enough space for comments. Written comments give programs valuable feedback.

6. If a written instrument is used, it should be prepared in an attractive and professional manner. An attractive questionnaire which is well-organized and professionally prepared has a much better chance of being read, completed, and returned.

Obtaining Adequate Response Rates

Obtaining a high rate of response is extremely important with mailed follow-up questionnaires. If the instrument was mailed to 100 students and only 25 responded, the data obtained are suspect. Of course, a 100-percent response rate is the target, but it is rarely obtained. As a general rule, response rates of less than 75 percent may be suspect, depending upon the size of the sample and the treatment of nonrespondents.

A high response rate is necessary to avoid nonrespondent bias, a condition where those who did not respond differ from those who did. For example, a low response rate might be the result of a large percentage of students who are not working or were not pleased with the vocational program. In this case, those who did not respond differ from those who did, and the nonrespondents can bias the data. Generally, the higher the return rate, the lower the risk of response bias.

Increasing response rates requires careful and thorough planning, but the following strategies can help:

1. Convince respondents that the project is important.
2. Personalize the cover letter.
3. Use gifts, trading stamps, and/or sweepstakes.
4. Design a questionnaire that is attractive, easy to read, and complete.
5. Write questions in a simple, clear, and brief format.
6. Make the first questions easy and interesting; do not put important questions at the end; group related questions together.
7. Use first-class mail. Do not expect respondents to provide postage.
8. Be prepared to follow-up with a second questionnaire, a phone call, or even a personal interview with nonrespondents. Low response rates may produce biased results.

9. Do not promise or imply anonymity and then retain the respondent's identity. If the respondent's identity is needed, ask for it openly.

10. Inform students before they leave the program that a follow-up questionnaire will be forthcoming. Some schools have students self-address their own envelopes.

Analyzing and Summarizing Follow-Up Data

The key to analyzing and summarizing follow-up data so it will be useful is to keep it simple. The person assigned this task must consider the audience who will read and study the data. The presentation of sophisticated statistical analysis will often distract from the summary.

Data summaries are usually prepared using one of two processes, a computerized summary or a manual summary. Computer summary is used when technology and resources are available; a computer summary should be structured, formatted, and compatible with the computer.

Figure 6 presents a computer summary and an analysis of the mobility portion of a follow-up survey. The computer was programmed to summarize the responses to the mobility questions in the instrument and to print graphs. The same approach can be used with other related groups of questions. A major advantage of the computerized approach is the potential for multiple data comparisons; for example, the computer can be programmed to examine mobility data for male and female students, program areas, etc.

Manual summaries are used by many schools. A well-trained person can provide an excellent summary of most follow-up data surveys. When hand scoring, follow a simple process to insure that the data are tallied in a comparable fashion across all the follow-up instruments.

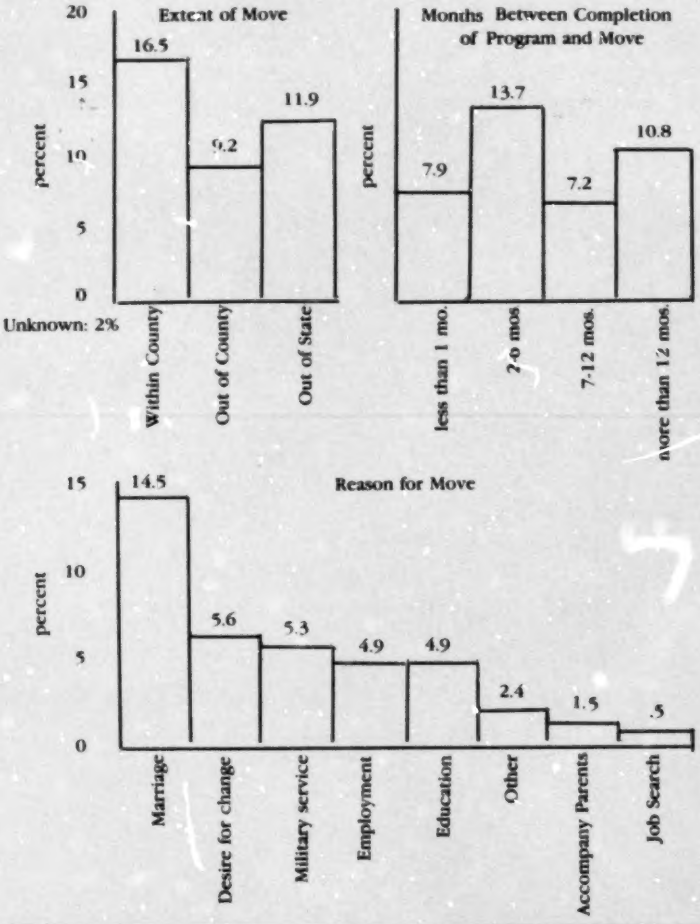
FIGURE 6

COMPARATIVE MOBILITY OF FORMER VOCATIONAL STUDENTS

Total Number of Students Surveyed: 194 (100%)

Number of Students Who Have Moved
Within 2 Years of Completing a Vocational Program: 69 (39.6%)

Number of Students Who Have Not Moved
Within 2 Years of Completing a Vocational Program: 125 (60.4%)



3

Employer Follow-Up Studies

Like student follow-up, employer follow-up is an organized, preplanned process. However, in the case of employer follow-up, the subject of the examination is the employers' perceptions of how effectively former vocational students were trained and prepared for employment.

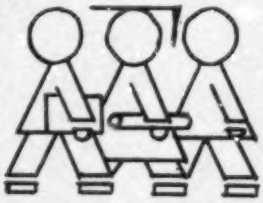
Because employers are in business to make a profit or to provide a service, they hire individuals they believe can contribute to their organizational objectives. Consequently, employers are in an excellent position to judge the contributions of vocationally-trained employees to a firm.

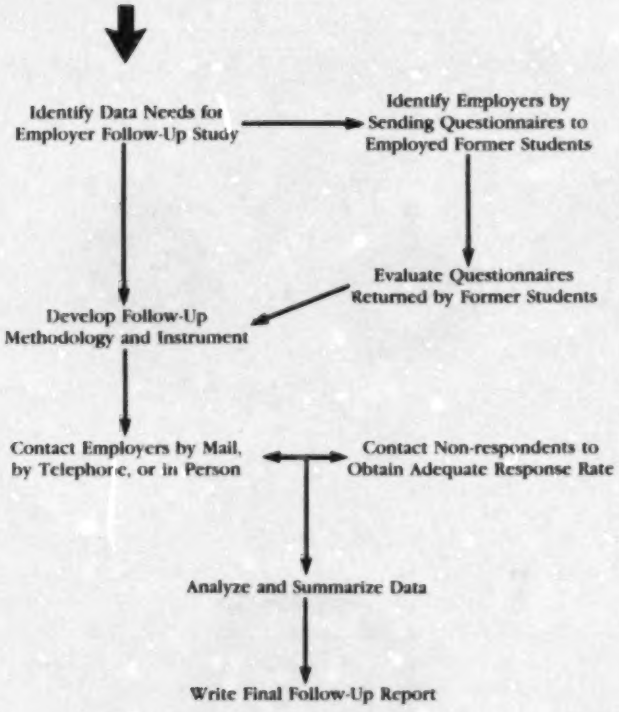
Identifying Employers

The employer follow-up system outlined in Figure 7 above is based on the use of a comprehensive student follow-up system. It is important to include a question that solicits the name, position, title, and address of the student's most immediate supervisor. And, most crucially, the questions should solicit the permission of the former student to contact the employer for the purpose of the follow-up survey. This permission is mandatory and is essential to the success of the follow-up.

FIGURE 7

SYSTEM FOR EMPLOYER FOLLOW-UP




Identify Data Needs for Employer Follow-Up Study
Identify Employers by Sending Questionnaires to Employed Former Students
Evaluate Questionnaires Returned by Former Students
Develop Follow-Up Methodology and Instrument
Contact Employers by Mail, by Telephone, or in Person
Contact Non-respondents to Obtain Adequate Response Rate
Analyze and Summarize Data
Write Final Follow-Up Report

Determining Data Needs

Two factors must be considered when determining what types of data are needed from employers: first, the requirements of the Vocational Education Data System (VEDS), and second, the information employers can supply to help meet the goals of the follow-up study.

VEDS is a federal reporting system developed by Congress in the late 1970s. Because vocational programs that receive federal funding are required to report data to VEDS, it is a good idea to consider VEDS data needs when developing an employer follow-up system. The following items will generate necessary VEDS data and can be included on the employer follow-up instrument:

1. Rate vocational training with regard to an employee's technical knowledge, attitude, and quality of work.
2. Provide an overall rating of your employee's vocational training as it relates to the requirements of his/her job.
3. How do vocationally trained employees compare with other employees in their work groups who did not receive vocational training?

Many employer follow-up surveys also seek to determine employers' opinions of vocational education and the performance of their vocationally trained employees. Depending upon the goals of the individual study, different directions can be taken in devising the employer follow-up questions. The following questions show the types of information many employer follow-up systems seek:

1. Does the employer look to the vocational training facility as a source of skilled manpower?
2. Will vocational education allow an employee to advance in his/her position?
3. Is vocational education important in making the decision to hire a certain individual?

Developing a Follow-Up Methodology

After determining the goal of the employer follow-up study, select the survey method (personal interviews, telephone interviews, mailed questionnaires, or a combination) most likely to produce the desired data. The cost of a particular method and the time it will take to produce results are also important considerations. As with student follow-up, mailed questionnaires are most commonly used for the first contact. Telephone interviews and personal visits are often used to supplement the initial contact with employers and to reach nonrespondents. In many cases, telephone and personal contacts can be made when carrying out other school-related activities.

Developing a Follow-Up Instrument

Regardless of how employers are contacted, a standard set of questions must be used. This will insure that the employers respond to requests for data in the same format, making all generated data compatible.

In addition to standardizing questions for the follow-up, the questions must be presented in a way that will promote an easy response. Employers and supervisors are busy, so follow-up questions should be concise and allow for an adequate response in a minimum amount of time. On mailed questionnaires, avoid lengthy written responses. Allowing the respondent to simply check appropriate answers will increase response rates.

When developing an employer survey instrument, remember that employer feedback is important and should not be taken lightly. Structure the instrument or make the personal contact in a professional, confidential manner. The instrument should be evaluated to pinpoint possible problems before it is put into use.

Analyzing and Summarizing Data

Once an adequate response rate has been achieved, the employer data can be analyzed and summarized following the guidelines outlined for student follow-up studies in Chapter Two.

4

Using Follow-Up Data

The uses made of follow-up data are related to the goals of the agency that conducted the study. However, preparing a concise report is a crucial step in any systematic follow-up.

Preparing Follow-Up Reports

Follow-up data are greatly enhanced if organized into a simple, usable format. A well-organized report is structured around a few major topical areas which include summaries of follow-up results.

Introductory Information—This section provides a brief overview of the process used in the follow-up. Include the background and the objectives of the follow-up, the plan used in conducting the follow-up, and the people who carried it out.

Methodology—This section provides a detailed account of the procedures used in conducting the follow-up. Items such as instrument preparation, sample selection, response rates, treatment of nonrespondent bias, and related methodologies are discussed here.

Summary and Analysis—This section presents a clean, clear summary of the data gathered. Put the summarized data into a logical order. The analysis of the data should be as simple and devoid of sophisticated statistical techniques as possible. Remember, many readers will not

understand complex statistical concepts and academic jargon. Sophisticated statistics may of necessity be the basis for the analysis, but the report's presentation must match the targeted audience. In addition, one must relate the analysis to the data and the questions being considered. The primary objective is audience understanding, not a complex analysis.

Data tables should be easy to interpret. A general rule to remember is that a table should be able to stand by itself without detailed explanation.

Conclusions and Recommendations—These are the heart of the report. Conclusions are based on the results of the data analysis. One of the most crucial aspects of a follow-up is the list of recommendations for program changes that results. Many policy makers, board members, advisory committee members, students, and teachers will read and study the recommendations more carefully than any other part of the report.

Was the data collected primarily for local use, or was it requested by an outside person or agency? It is important to know if the end results of follow-up studies will be used primarily by policy makers who make decisions or by the evaluators who make recommendations.

The recommendations should be succinct and based on the results of the follow-up. Each recommendation should cover a single issue. A general practice is to prioritize the recommendations whenever possible so the critical issues are noticed first by the reader. A common flaw in many follow-up reports is a list of recommendations which are not supported by the summarized data.

Appendix—This critical final section of the report usually contains copies of the follow-up instruments, cover letters, and other documents and materials used to conduct the follow-up. Generally, the Appendix should include items that will help the reader understand the follow-up study process and methodology.

If the follow-up ends at this point, then the entire process has been for naught. The culminating step is the reporting of results to various groups.

Publicizing the Results

There are a number of potential audiences for follow-up reports. Specific aspects of follow-up data may be used internally as a means of instigating needed changes, supporting effective programs that maintain high standards, or making a case for necessary program expansion. Follow-up data may be used for making formal reports to the local school board and members of the community as well as for meeting reporting requirements at the state and federal levels.

Results of follow-up studies make news, but be sure the basic reports are officially transmitted through normal school channels to teachers, coordinators, administrators, and school board members before any news releases are sent outside the system. Care must be taken to minimize harmful comments and to preserve the anonymity of specific individuals and programs.

Externally, the wide publication of stories describing positive results of the studies might be used to recruit students. Popular support can be generated to expand and update programs.

The preparation of a preliminary report which can be discussed with teachers and supervisors is helpful. These preliminary discussions may lead to direct improvements, or the information may clarify uncertainties. The importance of an effective two-way communication system—one that will determine the need for particular information and the use to which various data may be put—cannot be over-emphasized.

Developing Recommendations

A series of internal meetings where the findings of the study are discussed will allow administrators, counselors, teachers, students, and advisory committee members to develop a list of tentative conclusions.

Conclusions and recommendations must take data from many sources into consideration. Often, only educators and advisory groups have a chance to investigate all aspects of proposals for change. Before deciding upon major modifications, such as adding or dropping courses or programs, other segments of the public will want input as well.

The Use of Follow-Up Information to Effect Change

Vocational educators must be aware of changing technical needs and of the social and economic conditions that necessitate program change. Follow-up data gathered over a relatively brief period of time will not provide sufficient evidence upon which to base major programmatic changes; however, the follow-up may draw attention to a need for further investigation.

Program modifications may be undertaken as a result of recommendations expressed at these meetings. The recommendations may be used to alter undesirable circumstances or to improve the quality of the program. Any recommendations made should indicate when possible the source of the suggestions, whether they came from an individual, from the follow-up data, or as usually happens, from a combination of sources (see Figure 8).

FIGURE 8
RELATIONSHIP OF FOLLOW-UP INFORMATION TO SUGGESTED PROGRAM CHANGES

Suggested Changes	Follow-Up Information
Initiate proposal for changes	Program needs to be expanded
Update skills, offer retraining workshops to adults	Skill being taught is outmoded and no longer in demand
Add to or modify skills	Deficiencies in course content
Advise students to enter new or growth areas	Former students have trouble finding jobs in economically unstable fields
Be sure students understand a field's limitations early in their training	Jobs are available in economically unstable fields that pay poorly and require advanced training for promotion
Be sure only qualified students enter the program	Field requires specific talents or physical attributes

References

Copa, G. H. (1981). *Towards a strategy for planning vocational education*. Minneapolis: Minnesota Research and Development Center for Vocational Education, University of Minnesota.

Farley, Joanne (1979). *Vocational education outcomes: A thesaurus of outcome questions*. Columbus: The National Center for Research in Vocational Education, The Ohio State University.

Pershing, James A. and Schwandt, Thomas A. (1985). *Designing vocational follow-up surveys*. Bloomington: Vocational Education Services, Indiana University.

U.S. Congress (1984). *Carl D. Perkins Vocational Education Act Conference Report* to Accompany H.R. 4164 (Report No. 98-1129). Washington DC: 98th Congress, 2nd Session, October 2, 1984.

About the Authors

Dr. William B. Richardson has been active in follow-up research for the past several years. He conducted follow-up studies at Purdue University and has served as program development consultant to State and Federal agencies and secondary and postsecondary employment-related education programs. Dr. Richardson is currently Director of the Vocational Education and Technical School at Louisiana State University.

A printer by trade, Dr. Jerrold A. Nieminen is currently an associate professor at Purdue University and has collaborated with Dr. Richardson in the completion of several follow-up study research projects. He has been in the field of teacher education for nineteen years.